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ABSTRACT

This report presents brief descriptions of exemplary programs validated by the National Diffusion Network (NDN) and approved for national dissemination by the Joint Dissemination Review Panel, which focus specifically on the effective use of technology in education. As exemplary projects called Developer Demonstrators, 12 of the programs described receive Federal funds to provide training, materials, and assistance to groups that wish to set up similar programs. Four of these Developer Demonstrators receive supplemental funding to provide expanded services as NDN Technology Lighthouse Projects. Seven other programs described in the report currently receive no NDN funds for diffusion activities, but may offer services through cost/service agreements with potential adopters. All of the programs are concerned with computer applications in educational administration, management of instruction, and occupational training; computer literacy; computer- or technology-assisted-instruction in basic skills; technology utilization in education for the handicapped; and/or mass media technology. Information provided for each lighthouse project includes brief reports on facilities, equipment, and resources; services; staffing; special features; procedures for visitation; and a contact person. Descriptions of the other programs include scope, target audience, evidence of effectiveness, implementation requirements, financial resources, services, and a contact person. A directory of NDN State Facilitators is provided. (MJL)

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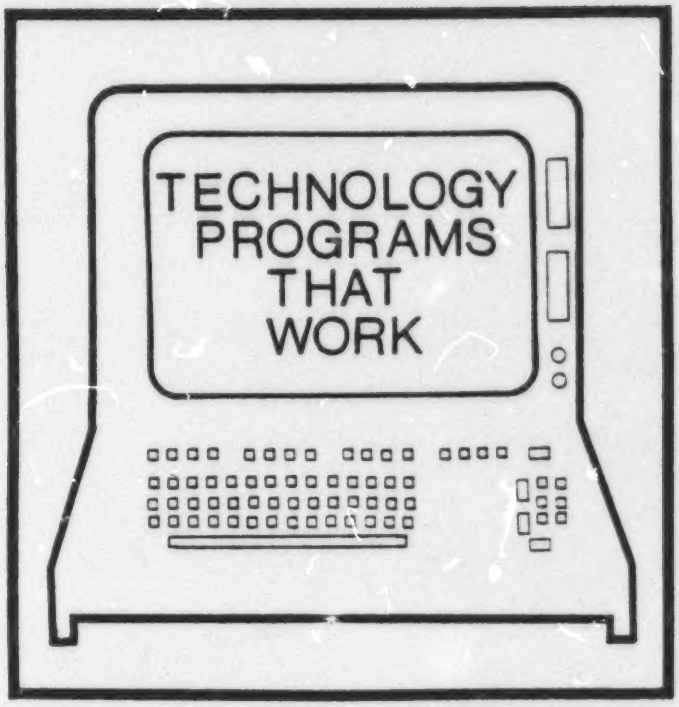

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NDN

NATIONAL DIFFUSION NETWORK

A NATIONAL DIFFUSION NETWORK RESOURCE OF
EXEMPLARY PROGRAMS APPROVED BY THE
JOINT DISSEMINATION REVIEW PANEL
DEPARTMENT OF EDUCATION

prepared by

NORTHEAST REGIONAL EXCHANGE
101 MILL ROAD, CHELMSFORD, MA. 01824 (617)-256-3987

LARRY VAUGHAN, EDITOR

FALL 1982

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Northeast Regional Exchange, Inc.

The Northeast Regional Exchange, Inc. (NEREX, Inc.), a private, not-for-profit corporation, is a service agency that promotes educational equity and improvement. NEREX, Inc. coordinates resources and sharing of information among the seven State Departments of Education in the Northeast based on an established set of state and regional priorities. Through NEREX, Inc. states are able to expand their available resource base and work through regional sharing efforts toward program improvement in local school districts and other educational institutions. The Northeast Regional Exchange, Inc. is governed by a Board of Directors that includes the seven Chief State School Officers from the Northeast and eight representatives from a wide variety of education constituency groups in the region.

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The Northeast Regional Exchange, Inc. is indebted to several persons for their assistance in the development of this catalog. Without the encouragement and cooperation of Lee Wickline, Kathy Michaelian and Ron Cartwright of the National Diffusion Network Division, this catalog could not have been produced. Key personnel from each of the exemplary programs described deserve much credit for the timely development and refinement of the program abstracts.

Several persons gave generously of their time to review draft versions of the catalog. They offered candid feedback and editorial suggestions which greatly improved the text. Of particular help in this regard were Gloria Bowles and Kathy Michaelian. Douglas Fleming was instrumental in layout and design and helped in communications with Lighthouse Projects. A great debt is owed to Joanne M. Stressenger who provided the clerical assistance that kept us to the production schedule.

The development of this catalog proved to be personally renewing. The persons who work with the programs described in this catalog believe strongly in what they are doing. They are sincerely excited by the challenges and hard work involved in sharing their successes with other schools. This spirit of excitement continues as a pervasive element within the National Diffusion Network.

L. V.
Chelmsford, MA
November, 1982

THE SECRETARY
WASHINGTON, D.C. 20202

Foreword

Our Nation continues to witness rapid developments in the field of technology. We as educators must examine the potential of computers and other technological devices as tools to augment and improve the delivery of instructional services to students in the Nation's schools.

The Department of Education launched a major technology initiative in June, 1982. Our goal is to encourage the education community to continue to investigate effective ways to utilize technology as a support to the schooling process. Over the next several months, the Department will support work on a variety of efforts toward that end including: 1) research on effective methods of computer instruction, 2) the development of technical support mechanisms for instruction, 3) the identification of successful applications of technology to the schooling process, and 4) increased emphasis on partnerships between the public and the private sectors to promote effective applications of technology in schools.

This catalogue of National Diffusion Network (NDN) validated technology programs represents part of the Department's initial efforts to identify successful practices which can be shared with public and private schools throughout the country. The projects listed herein have been carefully evaluated and approved by the Joint Dissemination Review Panel as appropriate for national dissemination. The NDN Technology Lighthouse Centers have been approved to provide additional opportunities for educators to visit the Lighthouse Centers and to learn about a wide range of computer applications being used by the Centers in addition to the specific program approved by the Joint Dissemination Review Panel. All programs supported by the National Diffusion Network are equipped to provide inservice training and technical assistance to schools that choose to install one of the programs. I applaud the National Diffusion Network for these efforts to enhance the Department's technology initiative by identifying and spreading successful programs and practices.

T. H. Bell
Secretary of Education

INTRODUCTION

This National Diffusion Network catalog provides brief descriptions of exemplary education programs which focus on the effective use of technology. The term "exemplary" is conferred only after a program has been approved by the Joint Dissemination Review Panel of the Department of Education. This panel has responsibility for quality assurance, examining the evidence of both the cognitive and affective evaluation of each program and judging its effectiveness. Positive endorsement by a majority of the attending panel members constitutes approval.

Programs described herein are restricted to those that were developed specifically for and validated on the basis of their effective use of technology. For other NDN programs that have developed technology applications, consult the ninth edition of Educational Programs That Work, Winter 1982.

The NDN operates through two main kinds of projects-Developer Demonstrators and NDN Facilitators. Developer Demonstrators (D/Ds) represent exemplary programs. They receive federal funds to provide training, materials, and help to those who adopt their programs. NDN Facilitators in each state are the principal link between D/Ds and those seeking new ideas. They help to identify suitable NDN programs and then assist with adoption, training, and operation. Many Facilitators also help local school districts with other planning. A list of NDN Facilitators is included in the final section of this catalog.

The National Diffusion Network Division is committed to making technology oriented exemplary programs widely available to interested schools across the country. Twelve of the programs described are Developer/Demonstrators funded to provide dissemination and adoption services. Four of these funded Developer Demonstrator programs also receive supplemental funding to provide expanded services as NDN Technology Lighthouse Projects. The other seven validated programs described in this catalog currently receive no funds from the NDN to support diffusion activities. Unfunded validated programs are able to offer services through cost/service agreements negotiated with potential adopters. The type of funding is stated in the Services Available section of each description.

Under the direction of Secretary Bell the Department of Education has begun a nationwide technology initiative. The National Diffusion Network Division has responded to this initiative by identifying and promoting the exemplary programs described in the following pages. A major purpose of the catalog is to stimulate communication among the federal, state, intermediate, local, and postsecondary agencies that share responsibility for improvement of education through nationwide dissemination. The NDN encourages the broadest possible use of its successful programs.

For further information on any of the programs described, contact the project directly or your NDN Facilitator.

A WORD ABOUT LIGHTHOUSE PROJECTS

NDN Lighthouse Projects represent a new concept within the network. Lighthouse Projects have multiple roles in the process of helping educators learn to use technology effectively. Each is funded as a Developer Demonstrator and each is required to obtain adoptions of the technology program that was approved by the Joint Dissemination Review Panel. Each Lighthouse Project also receives a supplementary grant to support expanded demonstration activities and services.

Interest in computer instruction and other applications of technology continues to mount on a nation-wide basis. Each NDN Lighthouse Project demonstrates a wide variety of instructional technology applications. Among the Lighthouse Projects one may find: fully equipped learning centers, realistic high-tech work environments, mobile computer labs, business and industry connections, central office management and administration systems, multi-district arrangements, video instructional disks, alternative education training programs, computer science curriculum K - 12, teacher workshops, and student demonstrations. The Lighthouse Projects have developed as organizations serving other educators. Each has a history of reaching out to help other school districts use technology effectively. They are prepared to talk with other educators about their own interests and needs and to suggest appropriate alternatives for consideration.

Lighthouse Projects are aware of other resources, groups and institutions that may assist in the effective utilization of technology. They are familiar with the other technology programs in the NDN and can refer schools to Developer Demonstrators that have programs which match their specific needs and interests.

As a new phenomenon in the NDN , Lighthouses are useful resources that expand the services of the overall network. Each Lighthouse Project offers educators and decision-makers from around the nation programs for observation, discussion and training to assist these individuals in planning, designing and implementing computer technology programs. The Lighthouse Projects are prepared to tailor demonstration workshops to the specific interests of participants, provide consultation and training, refer participants to other resources and follow-up on concerns raised. They provide assistance in implementing components of the project at adopter sites and provide follow-up to insure successful implementation. Each Lighthouse is capable of transporting the project to interested school districts.

The pages that follow offer brief descriptions of the first four NDN Lighthouse Projects. These descriptions were cooperatively developed with each project through interviews. Each project has approved its description. However, these descriptions will not reflect changes that occur as each Lighthouse continues to upgrade its resource base and develop new services.

LIGHTHOUSE PROJECT DESCRIPTIONS

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LIGHTHOUSE PROJECT

Asbury Park
Educational computer applications of main frame, mini,and micro-computers for administrative and instructional uses.

General Description

The Asbury Park Lighthouse Project is prepared to help schools with a variety of concerns directed torward educational computer applications. The Lighthouse offers demonstration, technical assistance and training on several types of administrative and instructional computer applications. The Asbury Park School District is well established as a service provider in the area of computer applications. The District Computer Center serves 70 districts, several municipalities and the State Department of Education as regular clients. The Computer Center sells time sharing services for instruction and provides data services for a fee. Lighthouse staff, school personnel and Computer Center staff assist other educators in making decisions about computer applications.

In addition to the validated program focussing on secondary mathematics, the Lighthouse demonstrates a middle school mathematics laboratory, instruction in programming, a magnet elementary school and many administrative/management applications. Visitors see several school sites, a comprehensive Computer Center and associated facilities. The majority of the Lighthouse Project's software has been locally developed and is available in different versions to accomodate use on various hardware systems. Equipment demonstrated includes main frame, mini and microcomputers as well as associated peripheral devices.

Many of the Asbury Park Lighthouse Projects' classroom applications are available for both Apple II and TRS-80 computers. Copies of instructional and administrative software are available to those attending workshops. Structured and informal demonstration programs are offered.

Facilities

Asbury Park utilizes several schools and dedicated computer facilities in operating the Lighthouse Project. Area high schools, middle schools and elementary schools are used to demonstrate computer programming and other instructional applications. A spacious Computer Center located at the Board of Education office is used by the Lighthouse Project. A Computer Center Annex, a Telecommunications Center and eight Remote Job Entry substations are also utilized by the project. Demonstrations of main frame, mini and microcomputers are offered at each of these sites. The Computer Center houses a variety of technological devices and is manned by a staff of thirty two.

The Lighthouse Project is located approximately forty five minutes from Newark Airport. Several major hotels are close by to the project's main offices.

Equipment and Resources

The Asbury Park Lighthouse Project makes use of a wide variety of computer hardware and software. The Computer Center operates two main frame computers (NCR Criterion), three mini computers (Hewlett-Packard) and several microcomputers (Apple II+ and TRS-80 Model III). A full range of versital computer peripheral devices are also maintained in the Computer Center (optical scanning, key punch, card readers, tape drives, disc drives, modems, printers, specialty terminals, etc.). Participating schools use several types of computer terminals and microcomputers for instructional applications.

Persons who attend Lighthouse Workshops are exposed to both instructional and administrative applications. Much of the applications software is locally developed. Other sources of software include student made and commercial. Locally developed software is designed to run on main frame, mini or microcomputers. Microcomputer instructional software operates on either Apple II+ or TRS-80 microcomputers. Administrative applications also run on microcomputers. Administrative software cover most typical applications such as attendence reporting, grade reporting, scheduling, budget, payroll, personnel records and test scoring.

The Asbury Park Lighthouse Project makes considerable use of video tape equipment for training. Awareness video tapes are available for workshop participants. The Lighthouse Project operates a computer library that features manuals for the validated program, software for mini and microcomputers, implementation guides and general reference material. A limited amount of program documentation materials is also available.

Services Available

A variety of services are available from the Asbury Park Lighthouse Project. Demonstrations of the validated program in secondary mathematics, remedial middle school mathematics, an elementary magnet school gifted program with computer programming and instruction and a variety of administrative applications are offered frequently.

Demonstration programs include presentation, needs assessment and consultation. Needs assessment activities assist educators in making decisions about their primary computer applications needs. Technical assistance and consultation are available from project staff and staff of the district Computer Center. Library access is available as part of the demonstration program. Training is available on all aspects of the computer applications demonstrated by the Lighthouse Project. Software is available for visitors. Demonstration and training programs can be arranged according to needs.

Staffing

The Asbury Park Lighthouse Project is staffed by two education professionals. Other district staff associated with school programs (5) and the Computer Center (32) are available to the project and to visitors. School programs staff have experience implementing a wide variety of classroom computer applications. Computer Center staff are experienced in all aspects of data processing and are available to assist with programming. Persons attending workshops may also arrange to meet with staff at Remote Job Entry sites or with clients of the Computer Center.

Special Features

For more than a decade, the Asbury Park school district has been serving the computer application needs of other educators. On a service for fee basis, the Computer Center serves over 70 school districts and municipalities as well as the State Department of Education. They are experienced in customizing services for their clients. Their administrative and instructional applications are designed for operation on a variety of hardware systems. Demonstrations of main frame, mini and microcomputers on a wide variety of administrative and instructional applications are available.

Procedures for Visitation

The structured demonstration program is designed for one or more days and includes brief tours, presentations, question/answer time and needs assessment. Visitations are by appointment. Write or call the Project for more information.

CONTACT:

Jack Detalvo

Lighthouse Project
Asbury Park School District
1506 Park Avenue
Asbury Park, NJ 07712
(201) 774-0888

LIGHTHOUSE PROJECT

Demonstration Evaluation Center (CAM) educational applications of computers for the management of instruction, administrative uses and classroom instruction.

General Description

The CAM Lighthouse Project provides schools with state-of-the-art experiences in a wide variety of educational computer applications. This Lighthouse Project demonstrates and provides training on applications of computers for the systematic management of instructional processes, key administrative uses and classroom instruction covering many content areas and levels. A staff of six professional educators are prepared to offer assistance to other educators seeking help from the Lighthouse Project. A unique feature of the Lighthouse is the emphasis on the management of instruction. The Evaluation Center has developed and operates a computer based instructional management system that provides relevant data to teachers and students after each test taken on course objectives.

Beyond demonstrations of the computer applications of the CAM validated program, the Lighthouse Project offers many other useful computer applications. The user has a choice of a group-paced CAM version, an indivualized version, or the newest version called Mastery Management, all of which run on Apple II computers. ASSIST is another software system developed by CAM for special education tracking and management. There is extensive locally developed software for general administrative uses and a variety of instructional applications. CAM also develops software in cooperation with local computer firms and with educational computer consortia such as the statewide Minnesota Educational Computer Consortium (MECC) and Minneapolis area Total Information for Educational Systems (TIES).

The majority of CAM computer applications are designed for use on microcomputers. Local CAM schools use Apple II computers for most purposes. The CAM Lighthouse Project offices maintain documentation on most software programs and locally developed software is available to visitors. Structured two day demonstration workshops are offered frequently as well as tailor made workshops.

Facilities

The CAM Lighthouse Project utilizes ten separate locations including a large central office at the Eisenhower Community Center, six elementary schools, two junior high schools and one high school. Visitors can see demonstrations of various computer equipment and software applications at each of the locations. The 1500 square foot office facility houses six staff members and a variety of computers and peripheral devices.

The Lighthouse Project is located only thirty minutes from Minneapolis Airport. Limousine service is available to and from several nearby hotels including one which is only a block from the projects' central office.

Equipment and Resources

While the CAM validated program was originally developed to run on a main frame computer, most of the current computer applications of this Lighthouse Project have been designed for microcomputers. The project makes use of main frame computers for some administrative applications and for some activities involved in statewide and local computer consortia. CAM applications are for Apple II+ microcomputers. District schools use more than 120 Apple II+ microcomputers. A limited number of Texas Instrument microcomputers are utilized for applications of Logo.

Microcomputers are equiped with a variety of perpheral devices. Instructional management system and administrative applications input data to Apple II+ microcomputers through both card reader and floppy disk. Monitors, disk drives and printers are utilized for several classroom instructional applications.

Visitors are exposed to software for instructional management, administrative uses and classroom instructional applications. Software comes from four main sources: locally developed, commercial, Minnesota Educational Computer Consortium and Total Information for Educational Systems (TIES). Much of this software can be purchased through the Lighthouse Project.

The CAM Lighthouse Project has extensive documentation available for all computer applications that are demonstrated. The computer library includes software, program documentation, teacher's manuals, books, periodicals, information on nearby computer hardware companies (Honeywell, Control Data and Sperry Univac) as well as documentation of local and statewide computer consortia.

Services Available

Several services are available from the CAM Lighthouse Project. Visitors can see demonstrations of the CAM validated program, a new Mastery Management System, a variety of administrative applications, special education management systems, consortium student data bases and a wide range of classroom instruction applications.

Structured demonstration workshops are designed for balance among presentation, demonstration and consultation. Staff conduct needs assessments based on the computer applications concerns of visitors. Technical assistance, consultation and library access are available to those attending workshops. The CAM Lighthouse Project also offers customized demonstration programs based on the interests of particular groups. Training is available for all aspects of educational computer use which are utilized by the CAM Lighthouse Project. Training programs are individualized according to needs.

Staffing

The CAM Lighthouse Project is staffed by six education professionals. The professional staff have extensive experience in educational uses of computers. Staff have specialized in particular aspects of computer applications such as data processing, programming, software evaluation, instructional applications and implementation training. In addition to CAM staff, visitors may arrange to meet with persons involved in local and statewide educational computer consortia or representatives from cooperating computer manufacturing and service industries.

Special Features

Nearly fifteen years of experience in educational computing provide the CAM Lighthouse Project with a broad perspective from which to assist local schools in decision making about applications of technology. CAM has experience acting as a collaborative partner with other school systems in various computer activities. The location of CAM near Minneapolis places them in proximate contact with significant computer groups such as MECC and TIES and with computer producers in the private sector.

Procedures for Visitation

The CAM Lighthouse Project offers two day structured workshops which are repeated frequently. Also the project offers individually tailored demonstration programs on the basis of interest and need. Call or write the CAM Lighthouse Project for more information.

CONTACT:

Donald Sension or
John Ericson

The CAM Lighthouse Project
Hopkins Public Schools - 1001 State Highway 7
Hopkins, MN 55343
(612) 933-9230

LIGHTHOUSE PROJECT

THE COFFEE LIGHTHOUSE
Educational applications of computers for occupational training, administration and classroom instruction

General Description

The COFFEE Lighthouse Project offers assistance to educators implementing various applications of technology in schools. This Lighthouse provides demonstrations of the use of computers for instruction, occupational training, and administrative management. Interested persons can obtain information and training on a variety of computer applications to the learning process. COFFEE employs a wide range of computer hardware (mini and micro computer) and interfaces. An experienced group of professionals from COFFEE, participating schools and cooperating industries are prepared to help educators learn about and make decisions concerning the use of computers in education.
The COFFEE validated program provides training for secondary school age students in five diversed occupational areas that integrate and/or utilize computer technology. In addition to the validated program, COFFEE features several administrative and classroom applications. A large volume of computer software for various types of computers and applications is demonstrated and is available to visitors. A computer technology resource library contains: locally and commercially developed software; periodicals and journals; instructional/classroom textbooks; and curriculum guides. Software modifications are available for operation on a wide variety of hardware systems. The COFFEE Lighthouse will assist school districts in conducting high technology needs assessments from kindergarten through adult education. The following are examples of the demonstration workshops offered by the COFFEE Lighthouse staff:

- o occupational education in high technology
- o teacher education in computer technology
- o computer assisted instruction
- o mobile computer laboratory
- o hardware and software evaluation
- o adult and community education in high technology
- o computer technology programs for the gifted and talented student
- o computer literacy program
- o computers as an administrative and management tool
- o industry/education initiative

Facilities

The COFFEE Lighthouse Project operates at ten separate facilities in the general vicinity of Oxford, Massachusetts. These include three area high schools, three elementary schools, one middle school, a teacher center, a central data processing center and a mobile computer laboratory.
Demonstrations of computer technology equipment and software applications are offered at each location. The central data processing center utilizes a variety of equipment and technological resources. Digital Equipment Corporation's educational training center and several manufacturing facilities will provide additional physical and human resources to support the COFFEE Lighthouse project.
The Lighthouse Project is located approximately 50 miles west of Boston's Logan International Airport just off the Massachusetts Turnpike (Interstate 90). Major hotels are about twenty minutes from COFFEE's main site.

Equipment and Resources

The COFFEE Lighthouse Project makes use of a wide variety of computer hardware and software. The Data Processing Center houses a mini-computer (Digital PDP-11/34) complete with cartridge disc drive, magnetic tape drive, and a time sharing communication network. The Data Processing Center employs a diversed array of video and hard copy terminals including color graphic monitors (Digital Gigi), graphic high speed, and letter quality printers, mark sense card reader and word processing units. The computer system supports several computer languages such as BASIC, PASCAL, COBOL and Fortran. Several types of micro processors are used at each of the school sites. COFFEE uses video tape for several training purposes. Programmed training materials and video tapes from Digital Equipment Corporation are also available for visitor use. Computer software for a wide range of instructional and administrative applications is demonstrated at the Lighthouse Project. Software has been acquired from four main sources: (1) project developed, (2) student developed, (3) developed collaboratively with assistance from Digital, (4) purchased from commercial sources.

Although the COFFEE Lighthouse is a general resource on educational computer and technology applications, much of their efforts to develop effective applications have been concentrated in particular areas. Work with a federation of school districts and industries has brought about the development of applications to help secondary school age students learn skills in various occupations that utilize computers and modern technology. Many COFFEE applications concentrate on the following occupational areas: (1) data processing, (2) electronic assembly, (3) distributive education , (4) horticulture/agriculture and (5) building and grounds maintenance.

Visitors can make use of an extensive computer resource library located at the Data Processing Center. The library is strong in program documentation and support materials. Books, periodicals, guides and other print resources are available for visitors. An extensive collection of training video tapes is also housed in the library. An ever growing collection of selected reprints from journals is maintained to augment the resource base. Copies of COFFEE software are also available at the Data Processing Center.

Services Available

A full range of services is available from the COFFEE Lighthouse Center. COFFEE conducts demonstrations of the validated program as well as applications for instruction and administration. Since COFFEE has resources for several applications, demonstrations can be designed to fit the particular interests of participants.

Structured workshops of varying duration are offered frequently. Such workshops are designed to help educators make decisions about their needs for various computer applications. Staff conduct needs assessments covering a wide range of applications, from kindergarten through adult education. Technical assistance and consultation from project staff are available by appointment. Library access is available to visitors. Training on all aspects of the applications demonstrated by COFFEE is available through the Lighthouse Project. Programming staff are available to help make software conversions to enable the use of a variety of computer hardware.

Staffing

The professional staff associated with the Lighthouse Project are available to provide service to visitors. These staff are teachers, administrators, and school board members with diverse experience in computer applications. Cooperating staff from Digital Equipment Corporation and other business firms are also available to the Lighthouse Project.

Special Features

The history of the COFFEE Project has been based on the notion of a federation of many educators and a variety of cooperating institutions. In fact, the COFFEE Lighthouse currently deals regularly with 63 firms in the private sector to operate their program. Of particular interest is the longstanding public domain/private sector collaboration between the Oxford School System and Digital Equipment Corporation. COFFEE's original focus of providing technological applications to support secondary students' occupational development is also unique. Their capacity as a general resource on applications of computers to educational settings is strong and varied. Serving educators from kindergarten level through adult education is a unique feature.

Procedures for Visitation

COFFEE offers several three day workshops covering a variety of instructional topics. Such comprehensive workshops are advertized and scheduled by appointment. Likewise, one day visits according to expressed needs are scheduled by appointment. Call the COFFEE Lighthouse for more information.

CONTACT:

John Phillipo
COFFEE Lighthouse Project - Oxford Public Schools
5 Sigourney Street, Oxford, Massachusetts 01540
(617) 987-1626

LIGHTHOUSE PROJECT

Merrimack Education Center Technology Lighthouse Project. Educational applications of computers in the areas of computer assisted instruction, computer literacy, training, and the application of software.

General Description

The Merrimack Education Center Lighthouse Project provides schools with interactive technology and training to assist in accomplishing instructional goals. The Lighthouse Project provides computer application assistance to schools through demonstrations at its Computer Learning Center and through the implementation of field based programs. A staff of five professional educators are available to provide technical assistance in introducing successful computer applications in schools. The Lighthouse Project has four main components: (1) Computer Assisted Instruction (CAI), (2) School System Computer Support, (3) Computer Training and (4) Computer Software Exchange Library.

The Merrimack Education Center CAI program features courseware on 24 different topics. This courseware was developed by Dr. Pat Suppes of Stanford University and is marketed by Computer Curriculum Corporation. The Lighthouse has produced materials and training programs that support this courseware. The courseware is demonstrated in 16 nearby schools and at the central Computer Learning Center.

The school system Computer Support Division provides planning assistance to school districts for the implementation of computer technology within their schools. This support defines requirements through the development of program specifications. Support to schools is provided in both administrative and instructional applications of technology. This service is provided through both Center and field based training. The Computer Training component provides training for school system personnel in a variety of areas of computer literacy and computer science education. These programs are offered at the Computer Learning Center and also are delivered with graduate credit for field based training.

School districts participate in the development, exchange and preview of both public and commercial software for application in the educational process. Software is available to visitors and can be previewed at the Computer Learning Center. School districts are encouraged to share locally developed software through the Software Exchange Library.

Facilities

The central headquarters for Merrimack Education Center and the satellite Computer Learning Center are located in Chelmsford, Massachusetts convenient to interstate highways (I-95, I-93 and I-495) and to Logan International Airport in Boston. Limousine service is available from Logan Airport to the Lowell/Chelmsford area. The 4000 square foot facilities at the Merrimack Education Center satellite building include a conference room, an office for resource staff and consultants, a Software Library Center and classroom seminar rooms containing updated computer equipment. This satellite building is located within one half mile of the Merrimack Education Center research headquarters. Physical access is available with ramps for wheel chairs and a mobil van is available for transporting equipment to schools and conference sites.

Equipment and Resources

The Lighthouse Project utilizes mini and microcomputers as well as word processing systems. A variety of hardware systems is demonstrated at the Computer Learning Center including: microcomputers - Apple II (8), TRS-80 (8), Commodore Pet (3), Atari 800 (1) and Texas Instruments (1); A Data General (Nova IV) minicomputer is housed at the main facility and connects to lab sites in the schools. Each of the systems is equipped with peripheral devices such as floppy disk drive, printers, and hard disk drive.
All major vendors make computer software available for teacher preview and demonstration at the Learning Center site. Lighthouse holdings include software in several categories: verbal/math, college level, LOGO (both for Apple and TI), Visidex/Visitrend/Visiplot, Canadian public domain software for PET and TRS-80, math and alphakey to advanced calculus, statistics Edustat and UNICOM management series. Also included is the Minnesota Software Library system together with new software that is added to the system on a monthly basis. Also available in the Software Library are various systems of documentation, teacher manuals, books, periodicals and computer data base searching that accesses ERIC and other data bases for users, such as the School Practices File (SPIF).

In the Merrimack Valley schools, through the Merrimack Education Center lease program, over one hundred Apple computers are currently being used within elementary and secondary schools. Visitors are able to view training programs in operation at the Learning Center for students, teachers, and administrators. These programs are offered throughout the calendar year. Several summer institutes and summer camps are offered for students, and other programs for students and adults are available afternoons, evenings and Saturdays. In the Computer Learning Center visitors can see a cluster of eight terminals that are connected to the mini-computer at Merrimack Education Center central headquarters. Visitors can explore 24 different courses of instruction as well as management systems that are utilized within the schools. The cluster is a replica of what visitors would see in any school system that chooses to connect to the Merrimack Education Center mini-computer.

Services Available

The Merrimack Education Center Lighthouse Project, which operates from a newly designed Computer Learning Center, has the added capacity of being able to set up demonstrations in remote sites to illustrate a Computer Assisted Instruction program. Literature has been developed to describe all the components of the Computer Learning Center. The Merrimack Education Center, as a cooperative service center, has the ability to link with other service centers around the country and enable school districts to participate and explore the advantages of regional service delivery mechanisms as well as local school adoptions. Training programs at this Center, which operate in the areas of hardware, software and classroom applications, are scheduled for visitors based upon their particular needs and required technical asistance. Services are delivered to workshop participants based upon two models: from a user perspective; and, from a service delivery perspective. Training programs include computer literacy training, word processing, graphics, introduction to LOGO, BASIC, PASCAL and administrative uses of microcomputers.

Staffing

The Merrimack Education Center Lighthouse Project has a direct staff of five full time educational professionals, and is assisted by resource consultants in the specialized areas of curriculum technology, evaluation, staff development and management. In addition to Merrimack Education Center staff, visitors may arrange to meet with school system personnel in local school districts, central office or school building level for additional information on the application of technology to the classroom. Merrimack Education Center staff are also directly involved in the development of a state-wide educational practice file and this network is available for demonstration at the Computer Learning Center.

Special Features

The Merrimack Education Center is an educational service center servicing 22 school districts in the northeastern Massachusetts area and has been in operation since 1967. Merrimack Education Center is located in the high tech area of Massachusetts and provides a number of services to school districts as an educational broker. The Lighthouse works cooperatively with several technology firms in the private sector to bring about cost effective purchasing and services for schools. In the school service area, for example, the Center provides basic skill program support from training to scoring tests, evaluates programs for school districts and provides them with information resources. The Center also provides special education services for member communities, handles cooperative purchasing for the districts and provides staff development with credit through the masters degree at school facilities servicing as campuses throughout the area.

Procedures for Visitation

The Merrimack Education Center Lighthouse Project can be visited on any day of the week at the Computer Learning Center in Chelmsford, Massachusetts. Groups requesting training in any segment of the Lighthouse Project should make application prior to a planned visit to the Center and one, two or three day training sessions can be arranged. Training is based upon a minimum of five people attending at one time. Visitation to schools requires prior arrangements.

CONTACT:

Richard Lavin
William Flaherty
Jean Sanders

MEC Lighthouse Project
101 Mill Road
Chelmsford, MA 01824
(617) 256-3985

FUNDED NDN DEVELOPER DEMONSTRATOR PROJECTS

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PROJECT

UTILIZING COMPUTER-ASSISTED INSTRUCTION IN TEACHING SECONDARY MATHEMATICS

An integrated curriculum using computer activities and traditional instructional strategies

Target Audience

Approved by JDRP as a mathematics program for grades 9 - 12.

Description

Utilizing Computer-Assisted Instruction in Teaching Secondary Math was developed by the Asbury Park High School in response to a need to improve student achievement in mathematics and integrate the use of computers into the mathematics curriculum. Computer-assisted instruction combined with traditional instructional techniques are utilized in teaching Algebra I, Algebra II, Geometry, Trigonometry, Calculus, and Applied Mathematics. The project materials consist of forty-four (44) teaching units for the six identified courses with computer programs as the core of each unit. The topics included in the project materials were selected on the basis of overall importance of the topic to the course, difficulty of the topic, and appropriateness of presenting the topic on computer hardware.

In addition to the teaching units and computer programs, a battery of locally developed standardized tests are available for student evaluation.

Evidence of Effectiveness

The program has demonstrated that changes are significant and desirable, as project students on almost all measures of student achievement both in the preliminary and final field test using standarized and locally developed tests, achieved at a higher level after utilizing the program materials.

Implementation Requirements

A minimum of seven micro-processors or timesharing terminals are required to support project software for a medium size high school population. In addition, staff training in the use of computer programs, teaching units, and project tests is required.

Financial Requirements

A fee of $100 is charged for the teacher manuals and computer programs. Training costs are negotiable based on the number of participants and length of sessions.

Services Available

An NDN funded Developer Demonstrator Project. An NDN Lighthouse Project. Awareness materials are available at no cost. Visitors are welcome at project site any time by appointment. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training is also available at adopter site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

CONTACT: Jack Detalvo, District Supervisor of Instruction
Asbury Park Board of Education
1506 Park Avenue, Asbury Park, NJ 07712
(201) 774-0888

Developmental Funding: Title IV-C

PROJECT

DEMONSTRATION EVALUATION CENTER (CAM)

Dissemination/implementation of computer-assisted instructional management systems

Target Audience

Approved by JDRP as a program for evaluating and monitoring instructional objectives grades K-12.

Description

CAM is a microcomputer based instructional management system using teacher defined course objectives designed to support objective based instruction, competency based instruction or mastery learning approaches.

The Evaluation Center has developed and operates a computer based instructional management system that provides relevant data to teachers and students after each test taken on course objectives. Also available for inclusion in the printout are data on class performance on each objective and a test form evaluation. The time needed to get this information back to a classroom that has just been CAM tested is generally 24 to 48 hours from the date of testing.

Teachers using the CAM system of monitoring student achievement first commit themselves to basing their instruction on course objectives developed by curriculum groups and teaching teams in the district. They also test the course objectives on a regular basis, every two or three weeks. The objectives are tested by teacher developed test items, generally five to ten for each objective. Most teachers request tests that are pretest, posttest, and retention test in one.

The system is used in classrooms that are group-paced, individualized, multigraded, etc. Approximately 1000 classrooms (1-12) are using the system in subject areas including math, science, social studies, English, and reading. The Evaluation Center has developed techniques to assist teaching teams in identifying instructional strengths and weaknesses.

Evidence of Effectiveness

Sample evaluation results, using sequential Test of Educational Progress, Language Arts, administered in 1974; grade 10, experimental mean of 52.90, control mean 46.66; grade 11, 58.83, control 46.44; grade 12, 60.93, control 53.75 (all significant at alpha .01). Attitudes of both teachers and students toward CAM-style instruction were significantly positive after use of program. Project findings have been replicated in Yakima, Washington.

Implementation Requirements

CAM is available for adoption in single classroom or building.

- willingness to develop instructional objectives/test items
- access to computer facility (micro, mainframe, etc.)
- participate in staff development training

Financial Requirements

$2,000 - $2,500 : microcomputer/printer/optional card reader

$150 - $300 : CAM software

$2,000 : local staff workshop time (1-2 days), adopter implementation support, teacher and aide time

Services Available

An NDN funded Developer Demonstrator Project. An NDN Lighthouse Project. Awareness material packet (free) Visitors welcome at project site by appointment. Project staff available for awareness meetings, training, implementation, project evaluation consultation, and follow-up services. (Costs to be negotiated)

CONTACT: Marie Weld, Don Sension, Lee Rodel, John Erickson
Administrative Offices - 1001 Highway 7
Hopkins, MN 55343
(612) 933-9230

Developmental Funding: Title III

JDRP No. 75-14

PROJECT

COOPERATIVE FEDERATION FOR EDUCATIONAL EXPERIENCES (COFFEE)

High Technology - occupational education

Target Audience

Approved by the JDRP as an alternative occupational education program in high technology for alienated/disaffected secondary school age students.

Description

Project COFFEE was developed in response to the employment demands of high technology and the increasing number of alienated/disaffected secondary school age students. As a comprehensive instructional program, Project COFFEE has uniquely integrated four components: an academic component - which provides relevant (occupational and life coping) basic skills instruction based on an individualized educational plan; an occupational component - which provides hands-on educational experiences in adult-like high technology work environment while reinforcing basic skills; a counseling component - which provides occupational and emotional support utilizing state, regional and local social service agencies; and a physical education component - which offers a program of recreational activities adapted to enable students to develop a sense of self-accomplishment and group cooperation. Each occupational program features job entry skills, job placement skills, shadowing experiences and a related work-study program.

ELECTRONIC ASSEMBLY: Provides skills training in the layout, manufacturing and assembly of printed circuit boards with electronic components.

DATA PROCESSING: Skills training related to the occupational roles within a Data Processing Center.

BUILDING AND GROUNDS MAINTENANCE: Provides background experiences in several labor trade areas with emphasis on current technologies.

HORTICULTURE/AGRICULTURE: Provides occupational training experiences utilizing the current technologies of a solar greenhouse and the operation of a small farm.

DISTRIBUTIVE EDUCATION: Provides internship experiences through the computerized management and operation of a customized silk-screening/printing service.

Project COFFEE was developed by a regional, cooperative federation of seven school districts and a highly successful partnership with high technology business and industries. The partnership with cooperative business and industry has provided educational assistance in curriculum development, staff training, occupational training materials, equipment acquisition, competency based assessments, internship experiences and more.

Evidence of Effectiveness

Three year scores (1978-1981) on the Stanford Achievement Test - Advanced Battery documented positive trends through scale score gains not only during the program but when compared to three years scores prior to entry in Project COFFEE. Three year testing with the Tennessee Self-Concept Scales documented significantly higher gains than members of two comparable groups. Students participating in the data processing and electronic assembly programs demonstrated acquisition of entry level skills as measured by a valid and reliable competency based assessment. Students demonstrated a statistically significant decrease in absenteeism when compared within group and to a large group of comparable students.

Implementation Requirements

Support of educators, parents, community, school board, local social service agencies, and related business/industries is essential. The Project may be adopted by a single school district or by a federation of school districts (cost effective). The program functions extremely well as a "school within a school", therefore no additional building site is required. Staffing of the program requires the team teaching by a moderate special needs instructor and an occupational instructor for each training program. Implementation of a realistic work environment with state of the art equipment is required. An effective communication plan with students, parents, educators, local social service agencies and related business and industries is required.

Financial Requirements

Cost of replicating the program is approximately $2,500.00 - $3,000.00 per student or $45,000.00 - $50,000.00 per training program (15-20 students). Cost and educational effectiveness of the program is greatly enhanced by maximum utilization of existing government supported social service agencies and industry/education initiatives.

Services Available

An NDN - funded Developer/Demonstrator project. An NDN - funded Lighthouse site. Awareness materials are available at no cost. Visitors are welcome at project site by appointment. Project staff can attend out of state awareness meetings (costs to be arranged). Training is available for potential out of state adopter's site or a Developer/Demonstrator site. Follow up technical assistance is also available. Materials are available at a nominal charge (at cost) and include program manual, basic skills curriculum guide, guidelines for education/industry linkage, guidelines for interagency collaboration/community outreach, procedures manual for development of competency based assessments, diagnostic needs assessment survey manual and manual for student survival skills course.

CONTACT: John R. Phillipo, Director, Project COFFEE
Oxford High School Annex, Main Street
Oxford, MA 01540
(617) 987-1626

PROJECT

COMPUTER ASSISTED INSTRUCTION - MERRIMACK EDUCATION CENTER

A computer instruction program that offers reading, mathematics and language arts to students in their Chapter I classrooms

Target Audience

Approved by JDRP for reading instruction in grades 6-9. The courseware has been used successfully in other content areas and grade levels, but no evidence of effectiveness for these groups has been presented.

Description

Operating from an educational service center, this CAI project is an alternative, supplementary approach to providing reading, mathematics and language arts instruction in Chapter I programs. Beginning in 1982-1983, Chapter II funds are also allocated for this CAI implementation. Replicability of the drill and practice, as well as tutorial components, is available because the curriculum is standardized and packaged in strands. Instructional objectives of the selected courseware match local objectives and State basic skills objectives. The CAI lessons are planned to supplement the teacher's daily classroom instruction for individual or small group tutorial sessions. The teacher introduces the skill, and then provides review or practice for the learner to maintain and improve that skill. The CAI program is able to branch into further tutorial examples, extend the lesson, or, if the pupil has responded appropriately, progress to a higher level of difficulty in that same skill. Students can easily be followed in reading comprehension and in mathematics skills using diagnostic-prescriptive teaching techniques. The reports produced by the Computer Managed Instruction component, enable the teacher to see student gains and measure student progress from week to week.

The CAI program emphasizes basic skills and is effective with low-achieving students who have fallen behind one or two grade levels as compared with their age-mates.

The curriculum courseware was developed by Pat Suppes and marketed nationwide. The educational service agency provides local school districts with the kinds of assistance needed to implement this comprehensive curriculum on the CAI program.

Evidence of Effectiveness

Use of the reading curriculum over a period of one school year improves student performance in reading. With only 10 minutes per day of CAI reading, students made significant gains in their reading skills over and above those of a comparison group that received the traditional Title I instruction in reading. Students were tested each fall and spring with the METRO '78 and curriculum-specific tests on the computer.

Implementation Requirements

Elementary and secondary schools are equipped with CAI labs using terminals and printers operated by a remote minicomputer. Labs contain 8 terminals that can serve up to 240 students.

The curriculums are available for use with minicomputers or large mainframe computers (e.g., DATA GENERAL).

Financial Requirements

For the 8-terminal classroom lab, costs for leasing are $30,000 per year. Annual service agreement includes technical assistance, maintenance and updated equipment and software as well as all new items that are produced. Costs of operating the CAI system are within the typical per-student Title I allocations. One 10-minute session of CAI daily throughout the Title I project year was estimated to cost $0.25 per pupil lesson.

Services Available

An NDN funded Developer/Demonstrator. An NDN funded Lighthouse Project. This model of CAI installation can be successfully implemented by educational service agencies with local schools across the country. Structured staff training experiences help teachers utilize CAI and the gains reports as feedback to augment the standard curriculum. Manuals and other supportive materials are available. The computer system is managed, maintained and updated by a central facility and teachers need not learn computer programming. Teachers are trained to operate the system and to prescribe CAI lessons appropriate for individual students from the diagnostic information available on the computer.
Technical assistance, teacher training and consultation are available from the service agency.

CONTACT:

Dr. Richard J. Lavin
Executive Director
Merrimack Education Center
Chelmsford, MA 01824 (617) 256-3985

PROJECT

MARRS

The use of technology in soundfield amplification to improve communication and instruction for students in mainstream classes having hearing related academic difficulties

Target Audience

Approved by JDRP as an instruction technique in regular classrooms, grades 4-6, for students possessing educationally significant hearing losses.

Description

The project is directed toward improving the basic academic skills of 4th, 5th, and 6th grade target students while maintaining their participation in the "mainstream" of school activities. The regular classroom (least restrictive placement) eliminates the need for stigmatizing labeling, segregation and the expense and scheduling complications of special education and Title I resource room programming. It provides equal educational opportunities to all students who may have minimal hearing losses, not only the handicapped (including LD, BD, and ED students) but the average, low average or bright students as well. In addition the project is designed to improve reading and literary levels of low income, disadvantaged, rural and handicapped elementary school children. Improved academic skills by students should increase the number of students who will have successful educational experiences. The regular teacher conducts classes as usual for all students while wearing a lightweight cordless microphone, using amplification when lecture and oral instructions are required, and switching the microphone off when working with individual students or small groups. The cordless microphone permits the teacher to move freely about the classroom to instruct from any area while maintaining a consistent signal approximately 10 decibels above the average noise level in the room. This level of amplification is maintained based on periodic sound readings in each classroom. Typical teacher usage is three hours per day or 15 hours per week. The use of amplification in no way alters the teachers' habits or mobility, and no modification of instructional techniques, scheduling, curriculum, or use of facilities or materials is required.

Evidence of Effectiveness

Analysis of data indicated that at all grade levels target students receiving soundfield amplification of the classroom teacher's voice achieved T-scores on reading and language arts achievement tests (basic skills) closer to the mean of the population after only 1 year of treatment. The target students maintained improved academic scores for as much as 3 years at an additional cost of approximately $50 per classroom per year. This positive change was observed regardless of mainstream grade assignment, subtest observed, or years of treatment. All of the positive changes were significant beyond an alpha = .05. Furthermore, at all grade levels after 1, 2, and/or 3 years of treatment, the change was equal to or greater than the obtained (alpha = .05) as the result of resource room instruction, a more expensive intervention.

Implementation Requirements

Install and use soundfield amplification equipment in classroom.

Financial Requirements

1. Purchase of soundfield amplification equipment, approximately $1000 per classroom amplified.
2. Installation of equipment approximately $10.00 per classroom.
3. Maintance and batteries average less than $50 per classroom per year.

Services Available

An NDN funded Developer Demonstrator Project. Awareness materials are available at no cost. Visitors are welcome at project sites any time. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training is conducted at project site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

CONTACT:

Lewis S. Sarff Ph.D., Director of Research
Wabash & Ohio Valley Special Education District
Box E, Norris City, IL 62869
(618) 378-2131

PROJECT COMPUTERONICS

A course in programming, problem solving, and computer literacy

Target Audience

Approved by JDRP for gifted and high-achieving students in grades 6 and 7. The program has been successfully implemented at other grade levels and for other groups, but no further evidence has been presented to the panel.

Description

Computeronics is a 35-40 hour course in programming, problem solving, and computer literacy. The project was developed under USOE ESEA Title IV-C funding to meet an identified need for problem solving materials for gifted and high achieving middle school students. A survey by the National Council of Teachers of Mathematics to determine priorities for school mathematics for the 1980s, showed that problem solving received the highest ranking for curriculum emphasis. In addition, 90 percent felt that the problem solving should place emphasis on the use of computers. The increased availability of microcomputers in homes and schools has made it imperative that educators find ways to maximize their use in the classroom for all students as well as the gifted and talented.

Computeronics provides students an opportunity to: learn a simple programming language; use computers to solve problems; and see the ways that computers effect their lives. The course consists of two units. "Computers in Society" conveys information about the history of computers, their present and future uses, and computer-related careers. The student text, which employs a magazine format, includes articles, photos, ads, and a glossary. Because of the rapid change in technology this unit is easily augmented through inclusion of current magazine and newspaper materials. "Problem Solving with Computers" teaches students to program using the BASIC computer language. Students use their programming skills in solving word problems. This unit uses a combination of paper and pencil and hands-on activities. This combination allows as many as 10 students to work with a single computer. The materials are not hardware specific and can be easily adapted to a variety of delivery systems.

Both units use a mastery learning approach: each unit objective must be mastered before a student moves on to the next. The management system built into student lesson books, activities, and mastery answer book allows students to move at their own pace. Suggestions for teachers are included in the teacher's guides which include both facilitative and directive classroom organization.

Evidence of Effectiveness

The nonequivalent control group design was used to evaluate the Computeronics course on fifth through eighth grade high achieving and gifted students. Pre and posttests were administered to the experimental and control groups. The Computeronics Criterion Referenced Test (CCRT) with KR-20 reliability of .90 (N-898) was used to assess student knowledge of computers and BASIC programming. The data was analyzed with an analysis of covariance which statistically adjusts for the difference in the experimental and control group pretest means.

Implementation Requirements

Adopting teachers need teacher materials and two days of training. Students need course materials and access to a computer. The program has been implemented successfully with Apple, Atari, Commodore Pet, Ohio Scientific Instruments, Radio Shack microcomputers and with computer terminals.

Financial Requirements

Training costs for the project will depend upon a number of factors such as time and location, and should be negotiated with the project staff. Start up cost for two classes of twenty students each and one teacher, including all student and teacher materials is approximately $400.00. Recurring cost for student consumable materials is approximately $3.65 per pupil.

Services Available

An NDN funded Developer Demonstrator Project. Visitors are welcome by appointment at the project site and designated demonstration sites. Project staff is limited, but efforts will be made to attend awareness meetings. Training is conducted based upon written request of interested adopters. Training sessions can accomodate 25-30 participants. A major effort is being made to provide certified trainers in a number of locations to expedite cost effective program implementation. Cost for training should be negotiated with the project office, as the NDN funding is limited. Information on materials and training can be obtained by contacting the project office.

CONTACT: Director, COMPUTERONICS, Leon County School Board
925-A Miccosukee Road
Tallahassee, FL 32303
(904) 487-1520

Developmental Funding: Title IV-C

JDRP No. 80-30

PROJECT

INDIVIDUALIZED PRESCRIPTIVE ARITHMETIC SKILLS SYSTEM (IPASS)

IPASS is a computer managed criterion-referenced testing and instructional program in basic mathematics skills for grades 1-8

Target Audience

Approved by JDRP as a supplementary mathematics program for grades 5 and 6.
Diffusion Network.

Description

IPASS was designed to increase the achievement of intermediate grade students in mathematics through the use of advanced technology in the form of microcomputers. IPASS employs microcomputers and specially designed software as an integral part of both instruction and the management of student progress in a compensatory education setting. IPASS is an efficient and highly cost-effective project.

IPASS includes locally developed criterion-referenced tests, instructional and management software, cross-referenced tests, cross-referenced instructional resource file, and procedural guides for teachers and students.

IPASS objectives can be used to supplement most mathematic curricula without modification.

Evidence of Effectiveness

Gains shown by students between pre and posttesting on Metropolitan Achievement Tests in 1980-1981 are substantial and significant--14 NCE's at grade 5 and 15 NCE's at grade 6. At both grades, those gains were about twice the size of national Chapter I gains for math projects at the same grade levels using the same testing cycles. The results represent gains from nine different school settings. Gains across sites are similar and have been similar in the past. Previous years evaluations of the project do show sizeable gains for both grades in all project years.

Implementation Requirements

IPASS is designed as a "pull-out" program in which the student receives two 30 minute sessions per week. Using two microcomputers and a teacher or aide, up to 40 students per week can be served. IPASS can be adapted to an in-class or a laboratory setting. IPASS software is available in tape format for TRS-80 Model II/III 16K cassette systems. A disk version is also available for TRS-80 Model I/III disk systems (32K minimum). At least one printer must be available for the test correction, diagnosis and prescription. An intensive training program is required to fully implement IPASS. However, no special computer skills are required. Provision is made within the IPASS program for locally available instructional resources to be merged into the remediation activities.

Financial Requirements

A fee of $250.00 is charged for the IPASS software, including computer programs, criterion-referenced tests, student profile sheets, instructional resource file, and procedure guides for teachers and students. One (1) copy of these materials is included and permission is given to reproduce any and all materials and programs in quantities necessary for the adopting school district.

Services Available

An NDN funded Developer/Demonstrator Project. Awareness materials are available at no cost. Visitors are welcome at any time by appointment. Project IPASS staff members are available to explain and demonstrate IPASS at both in-state and out-of-state awareness meetings (cost to be negotiated). Training is conducted at the project site (and is also available at an adoptor site) (cost to be negotiated). Implementation and follow-up services are available (costs to be negotiated). Telephone hot-line is available to adoptor districts at any time during normal hours.

CONTACT: Robert R. Reynolds, Director Project IPASS
Pawtucket School Department, Park Place,
Pawtucket, Rhode Island 02860
(401) 728-2120

PROJECT

COMPUTER-ASSISTED-DIAGNOSTIC-PERSCRIPTIVE PROGRAM in Reading and Mathematics (CADPP)

A computer-managed program in basic reading and mathematics skills, which utilizes a locally developed criterion-referenced testing program to determine skill needs and program evaluation, and generates individual pupil prescriptions

Target Audience

Approved by JDRP as a reading program for grades 3-9 and as a mathematics program for grades 3-7.

Description

The CADPP was developed in response to the standardized, norm-referenced test scores of Buckingham County Public Schools' educationally disadvantaged students, which displayed an annually increasing gap between normal expected growth and actual growth.

Operating in a resource laboratory, the CADPP diagnoses the needs of participating pupils with a criterion-referenced testing program; inputs information into a data bank regarding student characteristics in the areas of learning styles and achievement levels; inputs information into a data bank regarding the instructional materials within the local school system; and generates individual pupil prescriptions which attempt to match up the student's characteristics to the most appropriate instructional material.

The set of computer programs in the CADPP package is available in two versions: batch COBOL and interactive BASIC. The BASIC language is operative on the APPLE II and TRS 80 microcomputers. The COBOL version has run successfully on IBM and NCR mainframe computers.

The latest extensions of the CADPP have included the addition of the "English As A Second Language" (ESL) skills for bilingual students or migrant education programs requiring this component.

Evidence of Effectiveness

Three-year fall-to-fall testing (1976-78) with the Science Research Associates (SRA) Achievement Series documented positive trends through standard score gains. Grade 3 students showed the highest gains in reading, with 23 NCE's; grades 6 and 7 evidenced 8 NCE's. Gains in mathematics ranged between 22 NCE's for grades 4 and 5, and 6 NCE's for grade 3. Overall, the gap between scores of participating and nonparticipating students was narrowed.

Implementation Requirements

The CADPP can be adopted by a single classroom unit or by several units within the system. Staff development/training in performance-process evaluation, criterion-referenced testing, classroom management, and computer literacy are offered by the CADPP staff. The CADPP software program must be utilized to operate the system, and the availability of computer hardware must be obtained by the adopting district.

Financial Requirements

A fee of $500 is charged for the CADPP software; however, any revisions and/or updates to the program are automatically forwarded to adopters at no extra charge. The use of CADPP criterion-referenced tests are optional to the adopter; however, are $3.00 per test booklet (nonconsumable). Should adopters elect to utilize another testing program, prior permission from the CADPP evaluator must be obtained in advance.

Services Available

An NDN funded Developer Demonstrator Project. Visitors are welcomed at the project site at any time by appointment. Awareness materials are available at no cost. CADPP training is performed by the developer staff at travel and per diem costs only charged to adopter (lodging and $20/day food expenses), along with travel costs to the training site. No consultant fees are charged; however, substitute fees may be charged should training require the use of a certified trainer from another adopting site. Training manuals are $10.00 each. Awareness and follow up monitoring are available; however, such costs will be negotiated.

CONTACT:

Debra J. Glowinski, Director of Federal Programs;
Office of Federal Programs - P. O. Box 292
Dillwyn, VA 23936 (804) 983-2714

Developmental Funding: Title I

JDRP No.79-15

PROJECT

MIGRANT STUDENT RECORD TRANSFER SYSTEM (MSRTS)

A Computer Link Offering Variable Educational Records (CLOVER)

Target Audience

Approved by JDRP as a program for migrant children, preschool through secondary, and teachers, teacher's aides, nurses, counselors, and administrators.

Description

The Migrant Student Record Transfer System (MSRTS)/A Computer Link Offering Variable Educational Records (CLOVER) is a computerized system with 162 terminals located in 44 states. The system serves 49 states, Puerto Rico, and the District of Columbia. Through MSRTS/CLOVER, the process of receiving, storing and transmitting health and educational information is available to all schools, education and/or health organizations which serve migrant children. Teachers, nurses, aides, administrators, and others have at their disposal educational and critical health data delivered to their state within 24 hours of a child's enrollment. In 4 days or less, an in-depth record of educational and health data will be received at the state's designated location. This information may direct the adopter in formulating strategies to assist the migrant child in achieving academically. Curricula being taught to migrant children is established by each state through an application submitted to the U.S. Department of Education and varies according to the established needs of migrant children at their various levels. The system's computer is programmed to provide skills-based information in the areas of Reading, Math, Early Childhood, and Oral Language. The health system provides the most updated reporting of health problems to insure continuity of health services by using the International Classification of Diseases (ICD.9.CM) and the Physician's Current Procedural Terminology (CPT) 4th Edition.

Evidence of Effectiveness

Effectiveness and utilization of the information received by the user is controlled and evaluated by each state. A statistical survey in 1981 showed 21,954 schools participating in the system; 1,178,002 critical health data messages were sent (within 24 hours); 1,814,201 academic records were sent; 1,447,322 medical records were sent; and 1,268,813 skills records were sent. These figures have increased each year since 1976. A 1980 study of turnaround-time showed: 30.5% of the records sent were received by the user in 2 days, 36.1% in 3 days, 19% in 4 days, and 14% did not respond. 1.4% of the records were received in more than 4 days.

Implementation Requirements

Interested adopters who have migrant children in their school plant or other education and health organizations who serve migrant children may contact the state director of migrant education in their respective state. If this information is not available, write or call the contact person listed below. Implementation requirements will be based on the level of participation.

Financial Requirements

Training costs can be as low as the cost of the Education/Health Training Manual ($2.50) and the Skills Manual ($10.50). Travel lodging and per diem costs are negotiable.

Services Available

An NDN funded Developer/Demonstrator Project.
Awareness materials are available. Visitors are welcome at project sites by appointment, Monday through Friday, 8:00 a.m. through 4:30 p.m. Training is conducted at the project site (adopter paying its own costs). If training is conducted out of the state of Arkansas, costs are to be negotiated. Quarterly workshops are held during February, May, August and November.

CONTACT:

Mr. Nolan McMurray, Administrator for Special Services and Technical Advisor
Migrant Student Record Transfer System (CLOVER), Arch Ford Education Building,
Capitol Mall, Little Rock, Arkansas 72201. Phone (501) 371-1857.

Developmental Funding: Title I (Migrant)

JDRP No. 19

PROJECT

CALCULATOR MATH

A supplementary program to improve students' mathematical skills through the use of a consumer-oriented curriculum which incorporates the hand calculator

Target Audience

Approved by JDRP as a supplementary math program for grades 7 through 9

Description

Calculator Math is a mathematics project which parallels and supplements the 7th-9th grade program. It brings the technology of the hand calculator into the classroom with a proven instructional curriculum. The program teaches students:

* to use calculators with efficiency and with confidence
* to improve their skills in problem solving, rounding off, estimating, and solving consumer word problems
* to improve their ability to work with whole numbers, decimals, fractions and percentages

Students use a calculator and calculator math worksheets one-fifth of their math time (approximately one day a week) for a year.

Project materials include the CALCULATOR MATH binder and task cards.

Binder contents:

Teacher's Guide:
describes the implementation and management of the program

Student Guide:
introduces the student to the calculator and reviews rounding off, estimating, and solving word problems

Work Sheets:
five units which supplement the whole number, decimal, fraction, and percentage curriculum.
Units contain pre/posttests and are adaptable for individual, small group or total class instruction

Answers and Place Value charts

180 Task Cards:
written and illustrated by students. Cards are color coded and assigned on appropriate work sheets.

Evidence of Effectiveness

Calculator Math is cost effective and increases student mathematics performance. Significant gains were achieved on both standardized and criterion referenced tests when target students were tested with and without the calculators. An average gain of 14 percentile points for 8 months of instruction was produced.

Implementation Requirements

The program can be implemented in a typical math classroom using regular teachers. Materials which must be purchased are the Calculator Math Binder and Task Cards (one set per teacher), and liquid crystal display Calculators (approximately one per two students). Calculator Math can be adopted by a single classroom or by several classrooms who may share the materials.

A one day training session in the management and implementation of the use of calculators in the CALCULATOR MATH Program, and the development of problem solving skills is required for adoption.

Financial Requirements

First year installation costs: Approximately $6.50 per student including purchase of calculators, materials and training.

Subsequent year: $1.50 per student (duplication cost)

Services Available

An NDN funded Developer/Demonstrator Project. Awareness materials are available at no cost. Visitors are welcome at demonstration sites by appointment. Project staff are available to attend out-of-state awareness meetings (cost to be negotiated). Training is conducted at project site or adoptor site (costs to be negotiated). Implementation and follow up services (regular Monthly Mailing of additional calculator activities and phone calls) are available to the adoptor.

CONTACT: Carolyn Aho / Jo Ann Bulotti Co-Directors
Calculator Math Office - 400 Mansell Street
Wilson Demonstration Site, SFUSD
San Francisco, CA 94134

Office: (415) 469-5697
School: (415) 239-6200

Developmental Funding: Title IV-C

JDRP No. 80-31

PROJECT CALCULATOR ASSISTED MATHEMATICS FOR EVERYDAY LIVING - CAMEL

Secondary General Math; Individualized Math Instruction; Consumer Mathematics; Calculator Assisted Mathematics

Target Audience

9th and 10th grade general math students.

Description

An individualized program of instruction in consumer related mathematics.

The CAMEL project provides a 2-year math program for students in grades 9 and up who are least successful in secondary mathematics and who usually wind up in "general math" classes. These students have gross deficiencies in computational skills and therefore cannot cope with the curriculum content (application) of the 9th and 10th grade. By using the calculator to compensate for the lack of computational skills, students will have time to concentrate on application skills which will enable them to function as informed and responsible consumers.

About 20% of class time is designated as the "computational phase" of the program. This part is completely personalized so that each student will be able to acquire the computational skills in which deficiencies were found.

The program consists of 8 computational modules and 31 application modules. Each module contains a pre and post test.

A Teacher Manual is provided for increasing teacher management skills in diagnosing student needs, in assisting individual students, and in recording and reporting student progress.

Evidence of Effectiveness

The program was field tested in 1980-81 in 14 junior high general math classes. Results of scores on the Test of Mathematical Skills indicated that the fall-to-spring changes are significantly high compared to 16 general math classes in the control group. All effect sizes were equal to or greater than 1/3 standard deviations.

Implementation Requirements

The CAMEL program can be implemented by any math teacher. Student-teacher ratio 1:30. A one-day training session is required for implementation. No special facilities are needed. Each student in the program should have access to a calculator. A set of CAMEL materials is required.

Financial Requirements

One set of calculators (@ $9.00) and one set of CAMEL materials ($450) which can be used by from 1 to 5 classes per day. Costs of expendable materials vary depending on the number of students involved. (30 per class).

Services Available

An NDN funded Developer Demonstrator Project. CAMEL Resource Staff Project consultants provide technical assistance and training in program implementation. Visitors are welcome to visit a demonstration school. Awareness materials are available.

CONTACT: Whiteford G. Colee
Project CAMEL - P.O. Box 1910
Daytona Beach, Florida 32019-1910
(904) 255-6475; Sunco. - 391-1011

Developmental Funding: Title IV-C

PROJECT

MEDIA NOW

A production-centered laboratory course of study in mass media technology and production techniques that helps students understand and cope with the influences of the mass media

Target Audience

Approved by JDRP as a media study program for students in grades 7-12.

Description

Media Now was developed by the Southwest Iowa Learning Resource Center to help students cope with the influences of communication technology. Students on the high school level, through a systematic, hands-on exploration of mass media techniques and influences, develop critical viewing and listening skills to help them cope with the persuasive power of the mass media.
Recent studies and observations suggest that teenagers rate the mass media as an overwhelming influence on how they interact with their family and social environment. Of the ten most listed influences, over half were mass media related. Parents and youth leaders have also expressed a need to provide teenagers with information to make them less susceptible to mass media technology.
This course contains 623 reading, writing and production tasks, organized at four levels, which motivates students to evaluate, interpret, analyze and better appreciate media technology.
The program can be conducted in the traditional classroom time periods and is often offered by the language arts department, although other discipline areas can also incorporate selected components. The program design includes performance objectives and "learning by doing" as a part of the management system. The course organization includes fifty "learning packages" grouped under seven modules which include Production, Hardware, Aesthetics, Genre, Evaluation, Message Interpretation and Presentation. Modules and packages may be used separately in an existing program or as a separate course offering. The program can be taught with existing staff by utilizing Media Now course materials which include fifty learning packages, student lab manuals, and a teacher's guide.
Various hardware items normally available in most schools will be needed depending upon selected objectives.
Students, teachers and others involved with the program will:

- change media use patterns by viewing and listening critically to selected media messages
- evaluate, interpret, analyze, appreciate and communicate through various communication forms
- read, manipulate, listen-to, watch, experiment with and selectively use communication technology
- photograph, record, talk, create, act (drama), discuss, film video tape, and gather data during the course.

Evidence of Effectiveness

Research (1972-74) employed project developed instruments in a pre/posttest control group design; testing included 25 Iowa High Schools encompassing inner-city, suburban, large rural, and small rural districts. Field testing and evaluation have included 140 Iowa School Districts. Significant gains (as compared with control students) were scored by Media Now students. Continued evaluation results (1980-81) show that Media Now provides students with the knowledge and skills required for informed media consumption and skilled media production. Research also indicates that an individualized approach to learning is an effective method for presenting course material in the study of mass media.

Implementation Requirements

Adopters of Media Now must purchase one Media Now Course of Study, which includes 50 LAPs and appropriate manuals, or individual modules or packages. The program can be adopted by an individual teacher, or may be used in a team approach. At least two staff members from adopting school must be trained in a two-day workshop. Media Now can be used in a normal classroom setting where minor furniture movement is possible. Darkroom facilities are helpful but not mandatory. Basic media production equipment is needed depending upon selected goals and objectives.

Financial Requirements

Media Now full course of study, $960.00; Student Learning Activity Guide (SLAG), $9.00 (one per student recommended); Student Learning Activity Book (SLAB), $9.00 (one for every two students recommended); Teacher Activity Book (TAB), $12.00.
All modules and packages are available on an individual basis, training fees (cost to be negotiated).

Services Available

An NDN funded Developer/Demonstrator Project. Awareness materials available at no cost. Visitors welcome by appointment. Staff available for out-of-state awareness meeting (cost to be negotiated). Training is conducted at adopter sites or at demonstration site (cost to be negotiated). Implementation and follow-up services available to adopter (cost to be negotiated). Toll-free telephone consultation available at 1-800-831-5886.

CONTACT:

Ron Curtis, Director Media Now; experience education;
401 Reed Street; Red Oak, Iowa 51566
1-800-831-5886 or 712-623-4913.

UNFUNDED VALIDATED PROJECTS

INDIVIDUALIZED COMPUTER ASSISTED REMEDIAL EDUCATION (I CARE). An individualized and computer-assisted program for providing supplemental basic reading instruction.....30

COMPUTERIZED PUPIL ATTENDANCE/CENSUS SYSTEM. A computerized system for tabulating and processing state-mandated pupil attendance and census figures and reports.....31

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COMPUTER ASSISTED INSTRUCTION. Title I Mathematics Laboratory with Computer Assisted Instruction (CAI). A diagnostic/prescriptive pull-out mathematics program with students receiving ten (10) minutes of daily concentrated drill on CAI.....36

PROJECT

Individualized Computer Assisted Remedial Education (I CARE) an individualized and computer-assisted program for providing supplemental basic reading instruction

Target Audience

Approved by JDRP as a supplemental remediation reading program for vocational education students (grades 10, 11, and 12).

Description

The I CARE Project began in 1979 as a federally funded project designed to develop the skills and abilities of vocational students in the areas of reading comprehension and vocabulary. The project was designed to incorporate individualized instruction, microcomputers, and audio-visual aids into a program that would significantly increase a student's cognition in the aforementioned areas.

Each participant spends a 50-minute class period each day for eighteen weeks completing the following materials: (1) A minimum of 30 computerized vocabulary programs. Each student is required to achieve a score of 80 percent before going on to the next program. (2) A minimum of 30 computerized reading programs. Each student is required to achieve a score of 80 percent before proceeding to the next program. Each time a student scores 100 percent on a reading program, the reading speed of the next program is increased. (3) A minimum of 25 audio-visual reading programs. (4) A minimum of 10 audio tapes with accompanying worksheets. (5) A minimum of two paperbound books of the student's choice. Each student spends one week in each of the five areas on a rotating basis. This is done to avoid boredom and potential discipline problems that might arise from continually using the same machine for an extended period of time.

A teacher aide is used to set-up student schedules, pretest/posttest students, instruct students in use and care of microcomputers, and maintain student records. The project uses TRS-80 microcomputers (model I, II, and III) and Apple II Plus. Most of the computer programs are locally produced and are written to subject teacher's specification. Main benefits of the program are that teachers determine the content of the computer programs, teachers work with individual students and the opportunity for the student to interact with the computer and set his own learning pace.

Evidence of Effectiveness

Using a pretest/posttest control group design, (1979-80 and 1980-81), 95 randomly selected grade 10, 11, and 12 vocational education students significantly outperformed ($P < .001$) 95 similar students on Vocabulary and Reading Comprehension subtests of the American School Achievement Tests. Treatment effects accounted for over 25% of the variability in the data and gains were 1.5 and .64 standard deviations for the vocabulary and reading comprehension respectively.

Implementation Requirements

I CARE can be adopted by a single teacher, a teacher aide, a classroom unit, or by several units. Extensive staff development and training in computer literacy is not a requirement.

Financial Requirements

Three computer master tape programs have been developed to enable teachers to author student programs in Vocabulary, Spelling, and Speed Reading and Comprehension. Master tapes cost $50.00 per program or all three programs for $125.00.

Services Available

Awareness materials are available at no cost. Visitors are welcome at project site by appointment. Project staff are available for awareness conferences and training (costs to be negotiated). Training workshops are also conducted at project site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

CONTACT:

Victor A. Miller, Federal Projects Coordinator
Blue Mountain School District
Red Dale Road, Orwigsburg, PA 17961-0319
(717) 366-0515

Developmental Funding: OVAE

JDRP No. 82-24

PROJECT

COMPUTERIZED PUPIL ATTENDANCE/CENSUS SYSTEM

A computerized system for tabulating and processing state-mandated pupil attendance and census figures and reports

Target Audience

Approved by JDRP for local education agencies and consortium of local education agencies.

Description

This system was set up with the objective of reducing by 40 percent the time required to compile and maintain pupil accounting and census information and to prepare the monthly and annual reports that are state mandated in Kentucky and are the basis for determining each school district's funding. By shifting from a system maintained by hand to a computerized system, the 38 school districts that are members of the Eastern Kentucky Educational Development Corporation have found it possible to make more efficient use of district personnel. The system is set up to allow for yearly initial input of student information, ten monthly cycles of collecting and reporting attendance data, annual reporting of attendance and other statistical data, and periodic and annual reports of census data for state and local use. The system is designed to produce these reports: teacher's record of daily attendance, teacher's monthly attendance report, principal's monthly attendance report, principal's annual attendance report, superintendent's annual statistical report, attendance growth factor report for first two months, annual census report, district census report, and other management reports needed by school district administrators.

Evidence of Effectiveness

The system was compared to a manual system for calculating attendance figures through a survey instrument. The average amount of time saved was 40%. This time savings for teachers and administrators allowed them additional free time to be more productive in areas involving their expertise as opposed to the tedious clerical task of preparing monthly and annual reports by hand.

Implementation Requirements

The programming language in which the programs are written is COBOL 74. The equipment currently being utilized is Sperry Univac System 80. Extensive training in the proper administrative and operation of the system is required. Purchase of specialized forms is also required. Chapter II funds are currently being used by participating school districts to fund the project.

Financial Requirements

Actual costs for adoption and maintenance of the project will vary according to size, availability of computer services and other such factors. Costs for operating this system in thirty-five (35) school districts with approximately 150,000 students is $264,879.00 or $1.79 per student. An adopting district or group of districts not having data processing equipment will experience certain start-up costs such as purchase of computer equipment, Data Center Staff Development and the costs of providing necessary facilities to house the data processing equipment and staff.

Services Available

Awareness materials are available at no cost. Visitors are welcome at project site any time by appointment. Project staff are available by phone and are able to travel to adopter's site. Training can be conducted at either the developer's site or the adopter's site. Implementation and follow-up services are available. Cost to be negotiated.

CONTACT:

Harry P. Brown; Eastern Kentucky Educational Development Corporation
P. O. Box 1269, 925 Winchester Ave., Ashland, KY 41101
(606) 324-5161

Developmental Funding: Title IV-C

JDRP No. 81-1

PROJECT

CASHFLOW FORECASTING SYSTEM

A computerized method of forecasting cashflow for use in making investment and loan decisions

Target Audience

Approved by JDRP for school administrators and accountants who make investment or loan decisions.

Description

This system was installed to assist in the making of investment and loan decisions and, specifically, to produce at least an eight percent increase in general fund interest earnings for the Jefferson County School District. The system provides the ability to enter forecasted and actual data for four different funds and then to project the cash balance for each day of a fiscal year. The data are revised to reflect actual transactions, and the projected cashflow balance is automatically recalculated for each day remaining in the fiscal year.

Since it was put into operation in April 1979, the system has proved to be far more effective than the informal, manual system it replaced. Financial management can now be based on the most complete and up-to-date information possible, with the data available almost instantly.

A computer terminal and a computer system that supports terminal operations and provides disk availability are used. The programming language is BASIC because this is the language normally used to teach computer programming to students. The Jefferson County School District already had a BASIC instructional program, so the necessary hardware and software were available for the Cashflow Forecasting System at no additional cost. The system provides the ability to process four separate funds. The types of financial data processed include loans and investments, payroll deductions, bond payments, and four optional revenue and three optional expense categories.

Evidence of Effectiveness

The computerized Cashflow Forecasting System was compared to the manual system it replaced. After the first full year of implementation use of the computerized system had resulted in a 42% increase in interest earnings. This increase represented approximately a half million dollar increase in interest income.

Implementation Requirements

A good working knowledge of cashflow techniques and access to data processing equipment are necessary to implement the system. The system is written in BASIC for Honeywell computer hardware. Conversions to other major hardware systems are possible.

Financial Requirements

A complete listing of the system programs and complete documentation are provided free by the project. Access to data processing equipment is necessary. Adopters may need programming support if conversions to other hardware systems are necessary.

Services Available

Since the project is not currently funded services are limited. Visits to the project site can be arranged. Orientation and training can be arranged (costs to be negotiated). Contact the project about other services.

CONTACT: Charles W. Grissett, Treasurer
Jefferson County Board of Education
3332 Newburg Road - Louisville, KY 40218
(502) 456-3351

Developmental Funding: Local

JDRP No. 80-13

PROJECT

MICROCOMPUTER-BASED ADMINISTRATIVE PROGRAMS: PROJECT SIMU-SCHOOL

A program using microcomputers to provide improved budgeting and financial planning, library automation, and attendance and cumulative records accounting

Target Audience

Approved by JDRP for school administrators, regional educational agency directors, colleges of education, and educational computing consortia wishing to supply computerized recordkeeping assistance to schools and school districts.

Description

FINANCIAL PROJECTION	The program includes tax, revenue, and expenditure history and projection; accomodates multiple funds and objects, and may be used to develop a two-year budget. Ten economic indicators and key parameters may be used to "drive" the forecasts and projection methods are selectable by a single keystroke. Arrow keys are used to locate data to be entered or revised. An "electronic spreadsheet" program is included with built in projection formulas. The program allows data to be stored and retrieved. Installation of a local chart of accounts is included.
AUTOMATED LIBRARY SYSTEM	This program is a full-function automated library system, with check-in/check-out, accounting, due and past-due notice printing, current borrower identification, circulation analysis, and reference searching capabilities. The Electronic catalog contains accession number, title, author, call number, category, publisher, copyright year, and up to seven subject areas. This system is appropriate for libraries with 5,000 to 50,000 volumes.
ATTENDANCE AND CUMULATIVE RECORD SYSTEM	The data in this program includes demographic information, schedule, absence and tardy data - both excused and unexcused. It allows absenses to be pre-excused. Input is by punched card, mark sense card, wand, scan sheet, or badge reader. The program has a report writer with user-selectable sorts and multiple inquiry keys. The program interfaces upline to a central or regional system and prints weekly scan sheets automatically.

Evidence of Effectiveness

The programs provide a quantitative basis for certain administrative planning and decision-making functions, tools to assist in the projection of available resources, and a database for efficient recordkeeping and research functions. The programs take the place of error-prone manual methods. They provide the added advantages of organizing and managing data, applying uniform and tested formulas to derive relationships in the data, and providing a variety of reports for classroom, campus, and district level use.

Implementation Requirements

All programs require a TRS-80 Model III or equivalent microcomputer. Library and attendance systems also require a hard disk drive system of 5 to 20 megabytes .

Financial Requirements

Financial Projection Program: $2000. Automated Library System: $2800. Attendance and Cumulative Record System: $2400.

Services Available

Awareness materials are available at no cost. Visitors are welcome at one of several demonstration sites by appointment. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training and installation are conducted either at project site or adopter site (if at adopter site, adopter pays travel expenses).

CONTACT:

M. William Dunklau, Director
Project Simu-School - 8160 San Cristobal
Dallas, TX 75218
(214) 327-2565

Developmental Funding: Title III

PROJECT

COMMUNICATION ARTS AND SCIENCES TECHNOLOGY (CAST)

A two year program combining English instruction with television production techniques

Target Audience

Approved by JDRP for students in grades 9-12

Description

CAST is a comprehensive interdisciplinary program designed to give high school students the opportunity to develop skills in the field of television communication. CAST offers both formal classroom instruction in language arts and practical experience in television studio production.

The Communication Sciences, or technological component of the CAST curriculum, provides students with extensive television experience. This includes "hands on" activities covering overall television productions. Skills development areas include utilization and operation of the television camera and the production switcher as well as audio components, video tape recording, lighting, editing of both audio and video, set design and construction, and other related television production operations. The Communications Arts portion is devoted to formal English instruction designed to enhance and reinforce Language Arts skills as used in the communications field. Areas of specialization include script writing techniques for producing news, documentary programs, interview programming and advertising and marketing. In addition, various works of poetry, short stories, novels and plays are read, interpreted and evaluated as concerns their potential integration into television productions. The second year of CAST provides for additional content awareness and skills development in advertising, program ratings, multi media productions, communications history, FCC license preparation, and film use in television. CAST students also participate in various school projects associated with telecommunications including Cable Television.

Indicative of its interdisciplinary characteristics, the CAST program encourages students and teachers to work closely with students and teachers in the Music, Art, Vocational, Business Education, Foreign Language, Social Studies and English departments in the mutual development of educationally oriented telecommunications projects.

Evidence of Effectiveness

As a result of involvement in CAST, students developed extensive technical skills in T.V., Communications, 78% were accepted into two or four year Post Secondary schools where they will major in Communications.
CAST students showed a significantly better record than the general high school population in terms of fewer suspensions, fewer dropouts, increased attendance and improved grade point average in academic studies.

Implementation Requirements

1. Staff training in CAST Language Arts and Sciences Curriculum geared for telecommunications.
2. Staff training in the technical skills and studio operations associated with television production and associated telecommunications projects.
3. Selection of CAST students with the assistance of the guidance department and CAST staff, based on student interest and motivation in the program.
4. Selection of CAST teachers to implement the program.
5. Utilization of T.V. studio/laboratory and operation of instructional equipment recommended for the program.
6. Selection of student activities and projects according to individual interests, needs and program objectives.
7. Use of prescribed print and non print curriculum materials designed for the CAST program.

Financial Requirements

The starting packet of instructional print materials can be purchased for $150 with permission given to the adopting district to duplicate consumables. Instructional media units can be purchased for $37 to $72 per sound/slide set and $47 per video tape.
An adopting District may develop additional media units following the CAST format if they wish. A "loan" arrangement covering all media materials can also be established with adopting districts at no charge, with the exception of postage, handling and insurance.

Services Available

Extensive teacher training in Communication Arts and Sciences curriculum implementation.
Assistance in planning, developing and utilizing Cable Television systems and T.V. program production.
Orientation sessions for Board of Education members, school administration, instructional staff, students and parents.
Facilities and instructional equipment assessment, equipment compatability and design.
T.V. studio facility designing and equipment specification writing.
Provision of a data bank and information distribution center for continuous follow up in program implementation.
Assistance in writing adoption grants for districts interested in adopting the CAST project.

CONTACT:

Robert M. Petracco, Director
Union Township Board of Education
2369 Morris Avenue
Union, New Jersey 07083 (201) 688-1200

Developmental Funding: Title III and III-C

PROJECT

The Mount Vernon TV Reading and Communication program harnesses the power of popular television videotapes and scripts and the feedback of a video camera to improve reading skills in grades 4-8.

Target Audience

Approved by JDRP as a reading program for grades 4-8. It has been used with success with disabled, average and above average readers in a variety of populations.

Description

Popular television scripts (Brian's Song, Happy Days, Fat Albert, Here's Lucy, Kotter, Columbo, Star Trek, Something for Joey, and Toy Commercials) are the texts. Cleared for use in schools, videotapes and matching lessons plans are used to build vocabulary, oral language skills, reading skills, writing skills, and the ability to handle complicated syntax. Teaching techniques provide immediate feedback and determine corrective measures. Extensive practice with sufficient modeling, leading, and testing is provided.

Students attend a Communication Studio three times a week. The studio is a separate room or a corner of a classroom. The group size ranges from 12-30. In a typical TV Reading period, students view a segment of a popular network videotape to aid in understanding the sophisticated vocabulary in the script (e.g., "meticulously, exasperated, pauper"). Actual viewing time in a 40 minute period is 3-7 minutes. In highly focused tasks that build understanding of word meaning and recognition, students master vocabulary in the script including camera, stage and actors' directions. Students become camera persons, directors, technicians, and actors as they confirm their ability to read at the end of each session by videotaping and playing back their dramatization.

Comprehension skills are taught using segments of videotape as a text, using the script, and transferring the learned strategies to other reading materials. Comprehension skills are further practiced and tested using individualized commercially produced and teacher made follow-up. To increase the ability to gather and express information, students make a documentary choosing a topic related to the script they have been using. Such topics as "Getting a Bank Loan," "Heroes," and "Courage" have been chosen.

Evidence of Effectiveness

Data was analyzed for students in grades 4-8.The average gain in NCE units was 8.5. Nationally used reading achievement tests of accepted validity and reliability were used. Disabled readers whose scores previously reflected cumulative regression, made dramatic gains.

Implementation Requirements

Three days of workshop training with 2 days' follow-up workshop after implementation are supported by 3 monitoring visits. Teachers and space to house a Communication Studio equipped with portable videocassette recorder, video camera, TV monitor, microphone on boom, chalkboard, and supportive materials are required.

Financial Requirements

Required training (can be shared with other adopters) and follow-up visitations cost $200 a day plus expenses. Package (tied to adoption) of single copies of videotapes, lesson plans, scripts, training manual, and reports is $250.

Services Available

Awareness materials are available at no charge. Staff can attend awareness conferences. Visitors are welcome by appointment. Training at replication sites is available (costs negotiable) under certain conditions. Training at demonstration site is available.

CONTACT:

Mrs. Jacqueline Van Cott Barra, Project Director
Mount Vernon School District
165 No. Columbus Ave.
Mt. Vernon, NY 10553 (914) 668-8777

Developmental Funding: Titles III and IV-C

JDRP No. 82-16

PROJECT

COMPUTER ASSISTED INSTRUCTION

Title I Mathematics Laboratory with Computer Assisted Instruction (CAI). A diagnostic/prescriptive pull-out mathematics program with students receiving ten (10) minutes of daily concentrated drill on CAI

Target Audience

Approved by JDRP as a mathematics program for Title I students in grades 3-6.

Description

Lafayette Parish had an effective diagnostic-prescriptive mathematics ESEA Title I pull-out program. In order to increase growth in mathematics, computer assisted instruction was added to an already effective math program. The program is operated with close coordination of math-lab instruction and daily CAI drill. The CAI program adjusts instructions to the level of the students and provides immediate feedback to the student. The CAI Program provides daily, weekly and monthly descriptions of progress and areas of difficulty which the classroom teacher can use to correct specific conceptual misunderstandings. Classroom instruction is imperative in providing conceptual understanding and remediation. Daily CAI drill provides the practice which Title I students especially need. This particular program was operated with forty minutes a day of mathematics laboratory time and ten minutes of CAI. The particular program used was devised by Computer Curriculum Corporation of Palo Alto California.

The addition of CAI instruction produces significantly superior achievement when compared to standard mathematics laboratory instruction.

Evidence of Effectiveness

A matched group comparison design was used in which both groups received forty (40) minutes of mathematics laboratory instruction and the treatment group received ten (10) minutes of CAI while the comparison group received ten (10) minutes of standard instruction. CTBS standard scores were collected pre and post and analysis of covariance was preformed on the post standard scores with pre scores as covariables. The treatment group was significantly superior at .01 level. The computer assisted instruction component enabled students to achieve one years gain in six months.

Implementation Requirements

Math/Lab - CAI involves the use of a minicomputer. Terminals installed at each site access the minicomputer by telephone. Two to three days of inservice training are necessary. This program is based on the use of materials and equipment from the Computer Curriculum Corporation from Palo Alto, California.

Financial Requirements

In addition to your regular program, the added dimension of Computer Assisted Instruction cost approximately $75.00 per student (based on 1500 students for equipment and program). Two to three days of inservice training is required. The main element is to synchronize diagnostic and programmed methodologies in the classroom together with the computer program and management system of CAI. (Note: The number of students can be reduced if you use the computer for other courses or purposes.)

Services Available

Awareness materials are available. Visitors are welcome at project site any time by appointment. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training is conducted at project site (costs to be negotiated). Training is also available at adopter site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

CONTACT:

Marion J. Cortez, Supervisor, Federally Supported Programs
Lafayette Parish School Board, P.O. Drawer 2158
Lafayette, Louisiana 70502
(318) 232-2620 Ext. 307

Developmental Funding: Title I

JDRP No. 82-46

NATIONAL DIFFUSION NETWORK
STATE FACILITATORS

ALABAMA
Dr. R. Meade Guy
AIDS - State Facilitator
Alabama Department of Education
Room 607 - State Office Building
Montgomery, Alabama 36130
(205) 832-3138

ALASKA
Ms. Gladys Foris
State Facilitator
Alaska Department of Education
Pouch F. State Office Building
Juneau, Alaska 99811
(907) 465-2841

ARIZONA
Dr. L. Leon Webb
Arizona State Facilitator
Educational Diffusion Systems, Inc.
161 East First Street
Mesa, Arizona 85201
(602) 969-4880

ARKANSAS
Ms. B. J. Confer
State Facilitator
Arkansas Department of Education
Arch Ford Education Building
State Capitol Mall
Little Rock, Arkansas 72201
(501) 371-5038

CALIFORNIA
Mr. Ira D. Barkman or
Ms. Gina Lurton
California State Facilitator
State Department of Education
721 Capitol Mall, Room 116
Sacramento, California 95814
(916) 322-6797

COLORADO
Mr. Charles D. Beck, Jr.
Colorado State Facilitator Project
N. CO Educational Board of Coop. Services
830 South Lincoln
Longmont, Colorado 80501
(303) 772-4420 or 442-2197

CONNECTICUT
Ms. Sally Harris
Connecticut Facilitator Project
Area Cooperative Educational Service
295 Mill Road
North Haven, Connecticut 06473
(203) 562-9967

DELAWARE
Dr. Walter Orr
State Facilitator Project
Department of Public Instruction
John G. Townsend Building
Dover, Delaware 19901
(302) 736-4583

DISTRICT OF COLUMBIA
Ms. Susan Williams
District Facilitator Project
Edmonds School
9th and D Streets, N.E.
Washington, D.C. 20002
(202) 547-8030

FLORIDA
Ms. Sue Merkhofer
State Facilitator for the
Department of Education
Division of Public Schools
Knott Building
Tallahassee, Florida 32301
(904) 487-1078

GEORGIA
Ms. India Lynn King
Georgia State Facilitator
226 Fain Hall
University of Georgia
Athens, Georgia 30602
(404) 542-3332

HAWAII
Mr. Richard Port or
Ms. Kathleen Steffen
Hawaii Educational Dissemination
Diffusion System (HEDDS)
Office of Instructional Services
595 Peppeekeo Street, Building H
Honolulu, Hawaii 96825
(808) 396-6356

IDAHO
Mr. Ted L. Lindley
State Facilitator
Idaho State Department of Education
Len B. Jordan Office Building
650 West State Street
Boise, Idaho 83720
(208) 334-2189

ILLINOIS

Dr. Shirley Menendez
Project Director
Statewide Facilitator Project
1105 East Fifth Street
Metropolis, Illinois 62920
(618) 524-2664

INDIANA
Mr. Ted Newell
Project Director
Indiana Facilitator Center
Logansport Community School Corp.
2829 George Street
Logansport, Indiana 46947
(219) 722-1754

IOWA
Dr. David C. Lidstrom
State Facilitator
Department of Public Instruction
Grimes State Office Building
Des Moines, Iowa 50319
(515) 281-3111

KANSAS

Mr. James H. Connett
Kansas State Facilitator Project
Director, KEDDS/LINK
1847 N. Chautauqua
Wichita, Kansas 67214
(316) 685-0271

KENTUCKY

Mr. John C. Padgett
Project Director
Department of Education
Capitol Plaza Tower Office Building
Room 1700
Frankfort, Kentucky 40601
(502) 564-4394

LOUISIANA
Mr. Charles Jarreau
Facilitator Project Director
State Department of Education
ESEA Title IV Bureau Office
Baton Rouge, Louisiana 70804
(504) 342-3375

MAINE
Mr. Robert Shafto or
Ms. Catherine Harding
Maine Facilitator Center
P. O. Box 1391
Gardiner, Maine 04345
(207) 582-7211 or 7212

MARYLAND
Dr. Raymond H. Hartjen
Project Director
P. O. Box 265
Simms Landing Road
Port Tabacco, Maryland 20677
(301) 934-2992

MASSACHUSETTS
Dr. John Collins
Massachusetts Diffusion Assistance
Project, THE NETWORK
290 South Main Street
Andover, Massachusetts 01810
(617) 470-1080

MICHIGAN
Ms. Deborah Clemmons
Michigan State Facilitator
Michigan Department of Education
Box 30008
Lansing, Michigan 48909
(517) 373-1806

MINNESOTA
Mr. Gene Johnson
ECSU5
Chicago and Fifth - Star Route, Box 15
Staples, Minnesota 56479
(218) 894-1930

Ms. Carol Johnson or
Dr. Diane Lassman
150 Pillsbury Avenue
Pattee Hall-University of Minnesota
Minneapolis, Minnesota 55455
(617) 376-5297

Dr. Richard L. Peterson
State Facilitator Project Director
SW & WC Educational C. S. U.
Southwest State University
Marshall, Minnesota 56258
(507) 537-1481

MISSISSIPPI
Mr. George Duke
Mississippi Facilitator Project
Mississippi School Board Association
P. O. Box 203
Clinton, Mississippi 39056
(601) 924-2001

MISSOURI
Ms. Jolene Schulz
Project Director
Columbia Public School System
310 North Providence Road
Columbia, Missouri 65201
(314) 449-8622

MONTANA
Mr. Pat Feely
State Facilitator Project
Office of Public Instruction
State Capitol
Helena, Montana 59601
(406) 449-3082

NEBRASKA
Dr. Mary Lou Palmer
State Facilitator Project Director
Nebraska Department of Education
301 Centennial Mall
P. O. Box 94987
Lincoln, Nebraska 68509
(402) 471-2452

NEVADA
Mr. Victor M. Hyden
State Facilitator
Nevada Department of Education
400 W. King Street
Capitol Complex
Carson City, Nevada 89710
(702) 885-3136

NEW HAMPSHIRE
Mr. Jared Shady
N. H. Facilitator Center
RFD 3, Box 26A
Loraco Plaza
Concord, New Hampshire 03301
(603) 224-9461

NEW JERSEY
Ms. Sarah Banks
N. J. State Facilitator Project
N. J. Department of Education
225 West State Street
Trenton, New Jersey 08625
(609) 984-6764

NEW MEXICO
Dr. Amy L. Atkins or
Ms. Susan Carter
New Mexico State Facilitators
Department of Educational Foundations
U of New Mexico - College of Education
Onate Hall, Room 223
Albuquerque, New Mexico 87131
(505) 277-5204

NEW YORK
Mr. Samuel Corsi, Jr.
State Facilitator
N. Y. Education Dept., Room 860
Albany, New York 12234
(518) 474-1280

NORTH CAROLINA
Mr. Henry A. Helms, Jr.
Project Director
Division of Development
Department of Public Instruction
Education Annex #1
Raleigh, North Carolina 27611
(919) 733-3632

NORTH DAKOTA
Ms. Pat Herbal
State Facilitator
Department of Public Instruction
State Capitol
Bismarck, North Dakota 58505
(701) 224-2281

OHIO
Mr. C. William Phillips
Ohio Facilitation Center
The Ohio Department of Education
Division of Inservice Education
65 South Front Street, Room 416
Columbus, Ohio 43215
(614) 466-2979

OKLAHOMA
Dr. Kenneth Smith
Statewide Facilitator
Edmond Public Schools
215 North Boulevard
Edmond, Oklahoma 73034
(405) 341-3457

OREGON
Dr. Richard Pedee
State Fafilitator
Multnomah County Education
Service District
P. O. Box 16657
Portland, Oregon 97216
(503) 777-7479

PENNSYLVANIA
Ms. Carolyn Trohoski
Facilitator Project, R.I.S.E.
725 Caley Road
King of Prussia, Pennsylvania 19406
(215) 265-6056

RHODE ISLAND
Mr. George McDonough
R.I. Facilitator Center
22 Hays Street
Providence, Rhode Island 02908
(401) 277-2617

SOUTH CAROLINA
Mr. Ronald Mickler or
Ms. Sharon Ray
State Facilitator
S. C. Department of Education
1429 Senate Street
Columbia, South Carolina 29201
(803) 758-3696

SOUTH DAKOTA
Mr. Gene K. Dickson
State Facilitator
Division of Elem. and Sec. Ed.
Richard F. Kneip Building
Pierre, South Dakota 57501
(605) 773-3395

TENNESSEE
Mr. Martin McConnell or
Dr. Charles M. Achilles
Project Directors
College of Education/Capitol BERS
2046 Terrace Avenue
University of Tennessee
Knoxville, Tennessee 37916
(615) 974-4165 or 2272

TEXAS
Mr. Walter Rambo
Texas State Facilitator
Texas Education Agency
201 East 11th Street
Austin, Texas 78701
(512) 475-6838

UTAH
Dr. Kenneth P. Lindsay
Utah State Facilitator Project
Utah State Office of Education
250 East 500 South
Salt Lake City, Utah 84111
(801) 533-5061

VERMONT
Mr. Ed Ferenc
Vermont State Facilitator
Bennington-Rutland Supervisory Unit
Manchester Center, Vermont 05255
(802) 485-6269

VIRGINIA
Dr. J. B. Linder, Jr. or
Mr. Robert Foster
Virginia State Facilitators
Educational Services, Inc.
2845 Rollingwood Road
Petersburg, Virginia 23803
(803) 536-5932 or (804)732-3584

WASHINGTON
Mr. Keith Wright
Project Director
Washington State Facilitator
P. O. Box 2807
Yakima, Washington 98907
(509) 452-1540

WEST VIRGINIA
Mr. Kenny J. Smith
W. V. State Facilitator
P. O. Box 1907
Elkins, West Virginia 26241
(304) 636-6918

WISCONSIN
Mr. Thomas Diener
State Facilitator
Department of Public Instruction
Instructional Services Division
125 South Webster
P. O. Box 7841
Madison, Wisconsin 53707
(608) 266-2101 or 267-7269

WYOMING
Mr. Jack Prince
State Facilitator
Wyoming Innovation Network System
State Department of Education
Hathaway Building - Room 236
Cheyenne, Wyoming 82002
(307) 777-6252

PUERTO RICO
(to be named)
Puerto Rico State Facilitator
Center for Dissemination, 5th Floor
Department of Education
P. O. Box 759
Hato Rey, Puerto Rico 00919
(809) 759-8240

VIRGIN ISLANDS
Ms. Phyllis Betz
Virgin Islands State Facilitator
Department of Education
P. O. Box 6640
St. Thomas, Virgin Islands 00801
(809) 774-0807

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